

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Claims**

1. (currently amended) A method for generating parametric audio output based on interaction of multiple ultrasonic frequencies within air as a nonlinear medium, said method comprising the steps of:

a) generating an electronic signal comprising at least two ultrasonic signals having a difference in value which falls within an audio frequency range;

b) transferring the electronic signal to an electro acoustical transducer film diaphragm which couples directly with the air as part of a single stage energy conversion process;

c) converting the electronic signal at the film diaphragm directly to mechanical displacement as a driver member of a parametric speaker; and

d) mechanically emitting the at least two ultrasonic signals from the film diaphragm into the air as ultrasonic compression waves which interact within the air to generate the parametric audio output.

2. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to an electrostatic film transducer.

3. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to an electret film transducer.

4. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to a thermally formed electro mechanical film

diaphragm as the electro acoustical transducer film diaphragm.

5. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to a piezo film diaphragm as the electro acoustical transducer film diaphragm.

6. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to a planar magnetic film diaphragm as the electro acoustical transducer film diaphragm.

7. (currently amended) A method as defined in claim 2, wherein step b) comprises the more specific step of transferring the electronic signal to an electrostatic backplate having a surface configuration comprising circular v grooves operable as a stator member with respect to the film diaphragm.

8. (original) A method as defined in claim 4, wherein step b) comprises the more specific step of transferring the electronic signal to a piezo film diaphragm having a configuration of a rectified sine form.

9. (original) A method as defined in claim 8, wherein step b) comprises the more specific step of transferring the electronic signal to a piezo film diaphragm which is supported by a backplate having a configuration of a rectified sine form.

10. (original) A method as defined in claim 4, wherein step b) comprises the more specific step of transferring the electronic signal to a piezo film diaphragm having a configuration of a sinusoidal form.

11. (original) A method as defined in claim 10, wherein step b) comprises the more specific step of transferring the electronic signal to a piezo film diaphragm which is supported by a backplate having a configuration of a sinusoidal form.

12. (currently amended) A method as defined in claim 1, further comprising the step of selecting a transducer film diaphragm having a dimension greater than the wavelength of the ultrasonic frequencies at their lowest value.

13. (currently amended) A method as defined in claim 1, further comprising the step of selecting a transducer film diaphragm having a dimension greater than ten times the wavelength of the ultrasonic frequencies at their lowest value.

14. (currently amended) A method as defined in claim 4, further comprising the step of selecting a transducer film diaphragm having a convex curvature which generates a diffuse radiation pattern for emission of the parametric output.

15. (currently amended) A method as defined in claim 4, further comprising the step of selecting a

transducer film diaphragm having a concave curvature which generates a focused radiation pattern for emission of the parametric output.

16. (currently amended) A method as defined in claim 4, further comprising the step of selecting a transducer film diaphragm having a dipolar propagation mode for which generates a diffuse radiation pattern for emission of the parametric output.

17. (currently amended) A method as defined in claim 4, further comprising the step of spacing the transducer film diaphragm a quarter wave distance from a supporting backplate.

18. (currently amended) A method as defined in claim 1, further comprising the step of selecting a transducer film diaphragm having a one-half wave length distance between peak to trough of a sinusoidal form for the diaphragm.

19. (currently amended) A method as defined in claim 4, further comprising the step of providing a dimpled transducer film diaphragm comprising a monolithic sheet of film having concave dimples in closely spaced, side by side array which generates a substantially uniform and homogenous radiation pattern for emission of the parametric output across the surface of the film diaphragm.

20. (currently amended) A speaker device for generating parametric audio output based on interaction of multiple ultrasonic frequencies within air as a nonlinear medium, said device

comprising:

a) a parametric signal generation system including an ultrasonic signal source, an audio signal source, and a modulating device coupled to the ultrasonic and audio signal sources for mixing the ultrasonic and audio signals for generating a resultant electronic signal comprising at least two ultrasonic signals having a difference in value which falls within an audio frequency range;

b) an electro acoustical transducer film diaphragm coupled to the parametric signal generation system which also couples directly with the air as part of a single stage energy conversion process; and

c) support structure for positioning and stabilizing the film diaphragm to enable mechanical displacement of the film diaphragm as a driver member of a parametric speaker.

21. (currently amended) A device as defined in claim 20, wherein the transducer film diaphragm comprises an electrostatic transducer.

22. (currently amended) A ~~method~~ device as defined in claim 20, wherein the transducer film diaphragm comprises an electret transducer.

23. (currently amended) A ~~method~~ device as defined in claim 20, wherein the transducer film diaphragm comprises a piezo film diaphragm as the electro acoustical transducer film diaphragm.

24. (currently amended) A ~~method~~ device as defined in claim 20, wherein the transducer film

diaphragm comprises a thermally formed electro mechanical film diaphragm as the electro acoustical transducer film diaphragm.

25. (currently amended) A ~~method~~device as defined in claim 20, wherein the transducer film diaphragm comprises a magnetic film diaphragm as the electro acoustical transducer film diaphragm.

26. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to a plastic film diaphragm as the electro acoustical transducer film diaphragm.

27. (currently amended) A method as defined in claim 1, wherein step b) comprises the more specific step of transferring the electronic signal to a polyvinylidene di-fluoride (PVDF) diaphragm as the electro acoustical transducer film diaphragm.

28. (currently amended) A method as defined in claim ~~22~~20, wherein the transducer film diaphragm further comprises a plastic film diaphragm as the electro acoustical transducer film diaphragm to emit ultrasonic signals.

29. (currently amended) A method as defined in claim ~~22~~20, wherein the transducer film diaphragm further comprises a polyvinylidene di-fluoride (PVDF) diaphragm as the electro acoustical transducer film diaphragm to emit ultrasonic signals.